Index Volume 44, 1983

March

Semiconductor Materials and Processes Part 1-Fabrication Technology

- Introduction N. Goldsmith and H. Kressel
- Optical Scanner for Dust and Defect Detection E. F. Steigmeier and H. Auderset
- Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer G. Harbeke, E. Meier, J. R. Sandercock, M. Tgetgel, M. T. Duffy and R. A. Soltis
- The Growth and Characterization of Epitaxial Solar Cells on Re-Solidified Metallurgical Grade Silicon R. V. D'Aiello, P. H. Robinson, and E. A. Miller
- Electron Flood Technique to Neutralize Beam Charging During Ion Implantation C. P. Wu, F. Kolondra, and R. Hesser
- Crystal Growth of Mode-Stabilized Semiconductor Diode Lasers by Liquid-**Phase Epitaxy** D. Botez and J. C. Connolly
- **Ohmic Contacts for Laser Diodes** I. Ladany and D. P. Marinelli
- 110 Positive-Resist Processing Considerations for VLSI Lithography L. K. White and D. Meyerhofer
- 135 Multilayer Resist Systems for VLSI Lithography M. Kaplan, D. Meyerhofer, and L. K. White
- Reactive Sputter Etching of Dielectrics M. T. Duffy, J. F. Corboy and R. A. Soltis
- 169 Patents

172

Authors June

Semiconductor Materials and Processes Part 2-Preparation and Properties

- 185 **Editor's Note**
- Epitaxial Reactor Systems: Characteristics, Operation, and Epitaxy Costs G. W. Cullen, J. F. Corboy, and R. Metzl
- 217 On a Relationship Between Substrate Perfection and Stacking Faults in Homoepitaxial Silicon A. Dreeben and A. Schujko
- An investigation of the Factors that Influence the Deposit/Etch Balance in a Radiant-Heated Silicon Epitaxial Reactor J. F. Corboy and R. Pagliaro, Jr.

Index Volume 44, 1983

March

Semiconductor Materials and Processes Part 1-Fabrication Technology

- Introduction N. Goldsmith and H. Kressel
- Optical Scanner for Dust and Defect Detection E. F. Steigmeier and H. Auderset
- Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer G. Harbeke, E. Meier, J. R. Sandercock, M. Tgetgel, M. T. Duffy and R. A. Soltis
- The Growth and Characterization of Epitaxial Solar Cells on Re-Solidified Metallurgical Grade Silicon R. V. D'Aiello, P. H. Robinson, and E. A. Miller
- Electron Flood Technique to Neutralize Beam Charging During Ion Implantation C. P. Wu, F. Kolondra, and R. Hesser
- Crystal Growth of Mode-Stabilized Semiconductor Diode Lasers by Liquid-**Phase Epitaxy** D. Botez and J. C. Connolly
- **Ohmic Contacts for Laser Diodes** I. Ladany and D. P. Marinelli
- 110 Positive-Resist Processing Considerations for VLSI Lithography L. K. White and D. Meyerhofer
- 135 Multilayer Resist Systems for VLSI Lithography M. Kaplan, D. Meyerhofer, and L. K. White
- Reactive Sputter Etching of Dielectrics M. T. Duffy, J. F. Corboy and R. A. Soltis
- 169 Patents

172

Authors June

Semiconductor Materials and Processes Part 2-Preparation and Properties

- 185 **Editor's Note**
- Epitaxial Reactor Systems: Characteristics, Operation, and Epitaxy Costs G. W. Cullen, J. F. Corboy, and R. Metzl
- 217 On a Relationship Between Substrate Perfection and Stacking Faults in Homoepitaxial Silicon A. Dreeben and A. Schujko
- An investigation of the Factors that Influence the Deposit/Etch Balance in a Radiant-Heated Silicon Epitaxial Reactor J. F. Corboy and R. Pagliaro, Jr.

250	Comparison of Different SOI Technologies: Assets and Liabilities L. Jastrzebski
270	Double-Barrel III-V Compound Vapor-Phase Epitaxy Systems G. H. Olsen and T. J. Zamerowski
287	LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films G. Harbeke, L. Krausbauer, E. F. Steigmeier, A. E. Widmer, H. F. Kappert, and G. Neugebauer
313	LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films M. Duffy, J. T. McGinn, J. M. Shaw, R. T. Smith, R. A. Soltis, and G. Harbeke
326	Silicon-Wafer Process Evaluation Using Minority-Carrier Diffusion-Length Measurement by the SPV Method A. M. Goodman, L. A. Goodman, and H. F. Gossenberger
342	Design Guidelines for Power Switching Transistors R. U. Martinelli and R. Ford
356	Patents
359	Authors
	September
371	A High-Transmission Focus Mask for Color Picture Tubes E. F. Hockings, S. Bloom, and D. J. Tamutus
384	A General Scattering Theory John Howard
404	An Analytic Method for Calculating the Magnetic Field Due to a Deflection Yoke Basab B. Dasgupta
424	A Simple Method to Determine Series Resistance and K Factor of an MOS Field Effect Transistor S. T. Hsu
	Surface Acoustic Wave Stylus
430	Part 1—Pickup and Recording Devices S. Tosima, M. Nishikawa, T. Iwasa, and E. O. Johnson
465	Part 2—Relationship Between Rectangular and Fan-Shaped Interdigital Transducers S. Tosima
475	Part 3—Optimum Tip Shape for Pickup Devices S. Tosima and M. Nishikawa
485	Part 4—Pyramid-Shaped Surface Acoustic Wave Transducer for Signal Recording Cutterheads S. Tosima and M. Nishikawa
499	Patents
502	Authors

December

- 507 Government Systems and GaAs Monolithic Components Kenneth J. Sleger
- 525 Some Microwave Properties of High-Speed Monolithic ICs K.-H. Kretschmer and H. L. Hartnagel
- 537 A Cooled Low-Noise GaAs FET Amplifier Robert E. Askew
- 551 A Dynamic CAD Technique for Designing Broadband Microwave Amplifiers B. S. Yarman
- 566 A Computer Controlled Microwave Tuner for Automated Load Pull F. Sechi, R. Paglione, B. Perlman, and J. Brown
- 584 Broadband Balun Oakley M. Woodward
- 589 Microwave Tag Identification Systems
 D. Mawhinney
- 611 Miniature Microwave Antennas for Inducing Localized Hyperthermia in Human Malignancies Robert W. Paglione
- 625 Phase-Locked Injection Laser Arrays With Integrated Phase Shifters
 D. E. Ackley, D. Botez, and B. Bogner
- 634 Patents
- 638 Authors
- 644 Index to Vol. 44, 1983

Index to Authors, Volume 44, 1983

- D. E. Ackley Phase-Locked Injection Laser Arrays With Integrated Phase Shifters, December, p. 625
- R. E. Askew A Cooled Low-Noise GaAs FET Amplifier, December, p. 537
- H. Auderset Optical Scanner for Dust and Defect Detection, March, p. 5
- S. Bloom A High-Transmission Focus Mask for Color Picture Tubes, September, p. 371
- B. Bogner Phase-Locked Injection Laser Arrays With Integrated Phase Shifters, December, p. 625
- D. Botez Crystal Growth of Mode-Stabilized Semiconductor Diode Lasers by Liquid-Phase Epitaxy, March, p. 64
- Phase-Locked Injection Laser Arrays With Integrated Phase Shifters, December, p. 625
 J. Brown A Computer Controlled Microwave Tuner for Automated Load Pull, December, p. 626
- J. C. Connolly Crystal Growth of Mode-Stabilized Semiconductor Diode Lasers by Liquid-Phase Epitaxy, March, p. 64
- J. F. Corboy Reactive Sputter Etching of Dielectrics, March, p. 157
- —Epitaxial Reactor Systems: Characteristics, Operation, and Epitaxy Costs, June, p. 187 —An Investigation of the Factors that Influence the Deposit/Etch Balance in a Radiant-Heated Silicon Epitaxial Reactor, June, p. 231
- G. W. Cullen Epitaxial Reactor Systems: Characteristics, Operation, and Epitaxy Costs, June, p. 187

R. V. D'Alello The Growth and Characterization of Epitaxial Solar Cells on Re-Solidified Metallurgical Grade Silicon, March, p. 30

B. B. Dasgupta An Analytic Method for Calculating the Magnetic Field Due to a Deflection Yoke, September, p. 404

A. Dreeben On a Relationship Between Substrate Perfection and Stacking Faults in Homoepitaxial Silicon, June, p. 217

M. T. Duffy Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

Reactive Sputter Etching of Dielectrics, March, p. 157
 LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

R. Ford Design Guidelines for Power Switching Transistors, June, p. 342

N. Goldsmith Introduction to Special Issue on Semiconductor Materials and Processes, March, p. 3

A. M. Goodman Silicon-Water Process Evaluation Using Minority-Carrier Diffusion-Length Measurement by the SPV Method, June, p. 326
L. A. Goodman Silicon-Water Process Evaluation Using Minority-Carrier Diffusion-Length

L. A. Goodman Silicon-Water Process Evaluation Using Minority-Carrier Diffusion-Length
Measurement by the SPV Method, June, p. 326

H. F. Gossenberger Silicon-Wafer Process Evaluation Using Minority-Carrier Diffusion-Length Measurement by the SPV Method, June, p. 326

G. Harbeke Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

—LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

—LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

H. L. Hartnagel Some Microwave Proposities of High-Speed Monolithic ICs, December, p. 525 R. Hesser Electron Flood Technique to Neutralize Beam Charging During Ion Implantation, March, p. 48

E. F. Hockings A High-Transmission Focus Mask for Color Picture Tubes, September, p. 371 J. Howard A General Scattering Theory, September, p. 384

S. T. Hau A Simple Method to Determine Series Resistance and κ Factor of an MOS Field Effect Transistor, September, p. 424

T. Iwasa Surface Acoustic Wave Stylus: Part 1—Pickup and Recording Devices, September, p. 430

L. Jastrzebaki Comparison of Different SOI Technologies: Assets and Liabilities, June, p. 250 E. O. Johnson Surface Acoustic Wave Stylus: Part 1—Pickup and Recording Devices, September, p. 430

M. Kaplan Multilayer Resist Systems for VLSI Lithography, March, p. 135

H. F. Kappert LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

F. Kolondra Electron Flood Technique to Neutralize Beam Charging During Ion Implantation, March, p. 48

L. Krausbauer LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

H. Kressel Introduction to Special Issue on Semiconductor Materials and Processes, March, p. 3

K. H.-Kretachmer Some Microwave Properties of High-Speed Monolithic ICs, December, p. 525

I. Ladany Ohmic Contacts for Laser Diodes, March, p. 101

D. P. Marinelli Ohmic Contacts for Laser Diodes, March, p. 101

R. U. Martinelli Design Guidelines for Power Switching Transistors, June, p. 342

D. Mawhinney Microwave Tag Identification Systems, December, p. 589

J. T. McGinn LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

E. Meler Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

R. Metzl Epitaxial Reactor Systems: Characteristics, Operation, and Epitaxy Cost, June, p. 187

D. Meyerhofer Positive-Resist Processing Considerations for VLSI Lithography, March, p. 110
 — Multilayer Resist Systems for VLSI Lithography, March, p. 135

E. A. Miller The Growth and Characterization of Epitaxial Solar Cells on Re-Solidified Metallurgical Grade Silicon, March, p. 30 G. Neugebauer LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

M. Nishikawa Surface Acoustic Wave Stylus: Part 1—Pickup and Recording Devices, September, p. 430

-Part 3-Optimum Tip Shape for Pickup Devices, September, p. 475

—Part 4—Pyramid-Shaped Surface Acoustic Wave Transducer for Signal Recording Cutterheads, September, p. 485

G. H. Olsen Double-Barrel III-V Compound Vapor-Phase Epitaxy Systems, June, p. 270 R. Pagliaro, Jr. An Investigation of the Factors that Influence the Deposit/Etch Balance in a Radiant-Heated Silicon Epitaxial Silicon, June, p. 231

R. W. Paglione A Computer Controlled Microwave Tuner for Automated Load Pull, December, p. 566

—Miniature Microwave Antennas for Inducing Localized Hyperthermia in Human Malignancies, December, p. 611

B. Perlman A Computer Controlled Microwave Tuner for Automated Load Pull, December, p. 566

P. H. Robinson Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

J. R. Sandercock Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

A. Schujko On a Relationship Between Substrate Perfection and Stacking Faults in Homoepitaxial Silicon, June, p. 217

F. Sechl A Computer Controlled Microwave Tuner for Automated Load Pull, December, p. 566

J. M. Shaw LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

K. J. Sieger Government Systems and GaAs Monolithic Components, December, p. 507 R. T. Smith LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

R. A. Soltis Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

-Reactive Sputter Etching of Dielectrics, March, p. 157

—LPCVD Polycrystalline Silicon: Growth and Physical Properties of Diffusion Doped, Ion-Implanted, and Undoped Films, June, p. 313

E. F. Steigmeier Optical Scanner for Dust and Defect Detection, March, p. 5

—LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

D. J. Tamutus A High-Transmission Focus Mask for Color Picture Tubes, September, p. 371 M. Tgetgel Rapid Characterization of Polysilicon Films by Means of a UV Reflectometer, March, p. 19

S. Tosima Surface Acoustic Wave Stylus: Part 1—Pickup and Recording Devices, September, p. 430

—Part 2—Relationship Between Rectangular and Fan-Shaped Interdigital Transducers, September, p. 465

-Part 3-Optimum Tip Shape for Pickup Devices, September, p. 475

—Part 4—Pyramid-Shaped Surface Acoustic Wave Transducer for Signal Recording Cutterheads, September, p. 485

A. E. Widmer LPCVD Polycrystalline Silicon: Growth and Physical Properties of In-Situ Phosphorus-Doped and Undoped Films, June, p. 287

L. K. White Positive-Resist Processing Considerations for VLSI Lithography, March, p. 110
—Multilayer Resist Systems for VLSI Lithography, March, p. 135

O. M. Woodward Broadband Balun, December, p. 584

C. P. Wu Electron Flood Technique to Neutralize Beam Charging During Ion Implantation, March, p. 48

B. S. Yarman A Dynamic CAD Technique for Designing Broadband Microwave Amplifiers, December, p. 551

T. J. Zamerowski Double-Barrel III-V Compound Vapor-Phase Epitaxy Systems, June, p. 270

